
A New Species of *Pariana* (Poaceae: Bambusoideae: Olyreae) Endemic to the Atlantic Moist Forest in the State of Bahia, Brazil

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ABSTRACT. A new species of *Pariana* from the Atlantic forest of the Brazilian state of Bahia is described. *Pariana carvalhoi* is an herbaceous bamboo (Poaceae: Bambusoideae: Olyreae) that resembles *P. lanceolata* but differs from it by the very short to absent fimbriae at the leaf sheath apex. Both species are endemic to Bahia, Brazil. The new species is only known from the locality of Una, in southern Bahia. It grows in remnants of humid forest and should be considered as critically endangered.

Key words: Bahia, Bambusoideae, Brazil, Olyreae, *Pariana*, Poaceae.

Pariana Aublet includes about 30 species distributed in the Amazon Basin from Costa Rica and Trinidad, to Bolivia and Brazil (Judziewicz et al., 1999). It has been included in its own tribe Parianeae by several authors (Calderón & Soderstrom, 1980; Clayton & Renvoize, 1986; Hollowell, 1994), but presently it is considered a genus of the tribe Olyreae (Clark et al., 1995; Hollowell, 1987, 1997; Zhang & Clark, 2000). *Pariana*, together with *Eremitis* Döll, is classified in the subtribe Parianinae (Hollowell, 1987, 1997), which is characterized by the presence of fimbriae at the apex of the leaf sheaths, termed oral setae (Calderón & Soderstrom, 1980; Hollowell, 1987, 1997), and by the spiciform inflorescence with each whorl presenting one female central spikelet surrounded by five male spikelets. Each of these gynecandrous whorls corresponds to a diaspore of the species, shattering as intact spikelet whorls. According to Soderstrom and Calderón (1971, 1974), the showy inflorescences of

Pariana species attract insects especially by the easily visible anthers, and these bamboo grasses are probably entomophilous. The pollen grains of some *Pariana* species differ from the basic pattern found in grasses (anemophily) by showing an areolate exine, sometimes vestigial columellae, and no distinct annulus (Salgado-Labouriau & Rinaldi, 1990; Salgado-Labouriau et al., 1993); this would offer more friction in wind transport than the smooth surface of other grass pollen grains. The absence of an annulus in *Pariana* pollen was confirmed, and the developmental detail of its microspore has been further investigated by Skvarla et al. (2003).

According to Clark (1990) the state of Bahia represents a significant center of diversity for Neotropical bamboos, with many new species being described from this area. The two species of *Pariana* found in Bahia, *P. lanceolata* Trinius (cf. Renvoize, 1984) and the new species described here, differ from other species of the genus by the barbate style, the smaller number of pale stamens (2 vs. 6 to 36 or more, with pale to bright yellow anthers, within *Pariana*), and the much longer pedicels of the male spikelets. Due to this reduced number of stamens, the inflorescences of the new and Bahian species are less conspicuous than those of other *Pariana* species.

The new species epithet, *Pariana carvalhoi*, honors the outstanding botanist André Maurício de Carvalho (1951–2002), who for many years was the curator of the herbarium at CEPLAC (Cocoa Research Center in Ilhéus, Bahia) and was a great



Figure 1. A–C, *Pariana lanceolata* Trinius. —A. Habit. —B. Inflorescence whorl of male and female spikelets, the solitary female spikelet cryptic. —C. Apex of leaf sheath with fimbriae evident and numerous. D–N, *Pariana carvalhoi* R. P. Oliveira & H. M. Longhi-Wagner. —D. Habit. —E. Apex of leaf sheath with fimbriae absent or vestigial. —F. Inflorescence whorl. —G. Central female spikelet. —H. Articulate inflorescence rachis. —I. Female anthercium, ventral aspect. —J. Female anthercium, dorsal aspect. —K. Male spikelet with adnate laminar pedicel, dorsal aspect. —L. Male anthercium, ventral aspect. —M. Male anthercium, dorsal aspect. —N. Caryopsis. A–C drawn from W. W. Thomas *et al.* 9399 (CEPEC); D–N drawn from the holotype, A. M. Carvalho *et al.* 4382 (CEPEC). Illustration prepared by Ivan Farias de Castro and Reyjane Patricia de Oliveira.

defender and advocate for the preservation of the Atlantic forest in eastern Brazil.

KEY TO THE SPECIES OF *PARIANA* IN BAHIA, BRAZIL

1. Leaf sheaths with numerous fimbriae at the apex, 0.7–20 mm long; leaf blades lanceolate (7.5–)11–16(–21.4) × 0.7–1.7(–2.5) cm . . . *Pariana lanceolata*
- 1'. Leaf sheaths without fimbriae at the apex, rarely with 1 to 3 vestigial fimbriae, less than 1 mm long; leaf blades ovate-lanceolate, (6–)11.5–20 × 2.1–3.4 cm *Pariana carvalhoi*

Pariana carvalhoi R. P. Oliveira & H. M. Longhi-Wagner, sp. nov. TYPE. Brazil. Bahia: Una, along road São José/Una, 10 Feb. 1994, A. M. Carvalho, L. G. Clark, T. S. dos Santos, W. W. Thomas & S. Sant'Ana 4382 (holotype, CEPEC; isotype, ISC). Figure 1.

Herba perennis cespitosa; vaginae glabrae raro fimbriatae; folia ovato-lanceolata. Spiculae masculae pedicellis longis, pilosis; stamina 2.

Plants with monomorphic stems 40–75 cm tall, 2–4 mm diam., glabrous or pilose, bearing 3 to 6 leaves; nodes glabrous, with a small conspicuous scar beneath. Leaf sheaths glabrous or rarely ciliate at the margins; apex usually without oral fimbriae, rarely with 1 to 3 vestigial fimbriae, less than 1 mm long; leaf blades (6–)11.5–20 × 2.1–3.4 cm, ovate-lanceolate, base symmetrical, attenuate, apex symmetrical, acuminate, both blade surfaces adaxially and abaxially glabrous or ciliate along the adaxial midrib, blade margins scaberulous; pseudopetioles 1–1.6 mm long; ligules 0.3–0.5 mm long. Inflorescence 6.5–8 × 0.5–0.8 cm, terminal and spiciform, with 6 to 8 spikelet whorls 12.5–14 × 0.5–0.8 mm; rachis 9–9.5 mm long, scaberulous. Female spikelets 10–11.2 × 2.6–3 mm, oblong, glabrous; glumes 9–10 mm long, both acuminate or shortly caudate, totally glabrous or with short trichomes at the apex; antheridium 9.5–11 × 2–3 mm, oblong-lanceolate, yellowish or dark brown. Male spikelets 2–2.5 × 1.2–1.5 mm, oblong-ovate, brown; pedicels 7–8.2 mm long, laminar, usually pilose; glumes 2–3 mm long, oblong-triangular, pilose; lemmas puberulent, 3-nerved; stamens 2. Caryopsis glabrous, cryptic but free within the persistent antheridium, apex with erect stylar remnants, hilum linear.

Pariana carvalhoi differs from *P. lanceolata* especially by its wider leaf blades that are ovate-lanceolate (vs. lanceolate in *P. lanceolata*), and by the absence of fimbriae at the apex of the leaf sheaths, that, if present, are vestigial. This absence of leaf sheath fimbriae was noted by Tutin (1936) for other species of *Pariana* but only from Amazonia.

Both *Pariana lanceolata* and *P. carvalhoi* are en-

demic to the Brazilian state of Bahia, occurring within moist Atlantic forest. According to IUCN criteria (IUCN, 1994), *P. carvalhoi* should be considered “critically endangered,” with only a few populations known, all occurring outside preservation areas. Although many field trips were made to different areas in Bahia, additional populations of the new species have not been found.

Paratypes. BRAZIL. **Bahia:** Una, estrada Una a São José, 18 Feb. 1994, A. M. Carvalho et al. 4395 (CEPEC), 10 Feb. 1994, A. M. Carvalho et al. 4384 (CEPEC); Fazenda Dendaeva, 30 km from Una, 28 Apr. 1976, C. E. Calderón et al. 2403 (CEPEC).

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